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SLING BRAIDING IN THE MACUSANI AREA OF PERU

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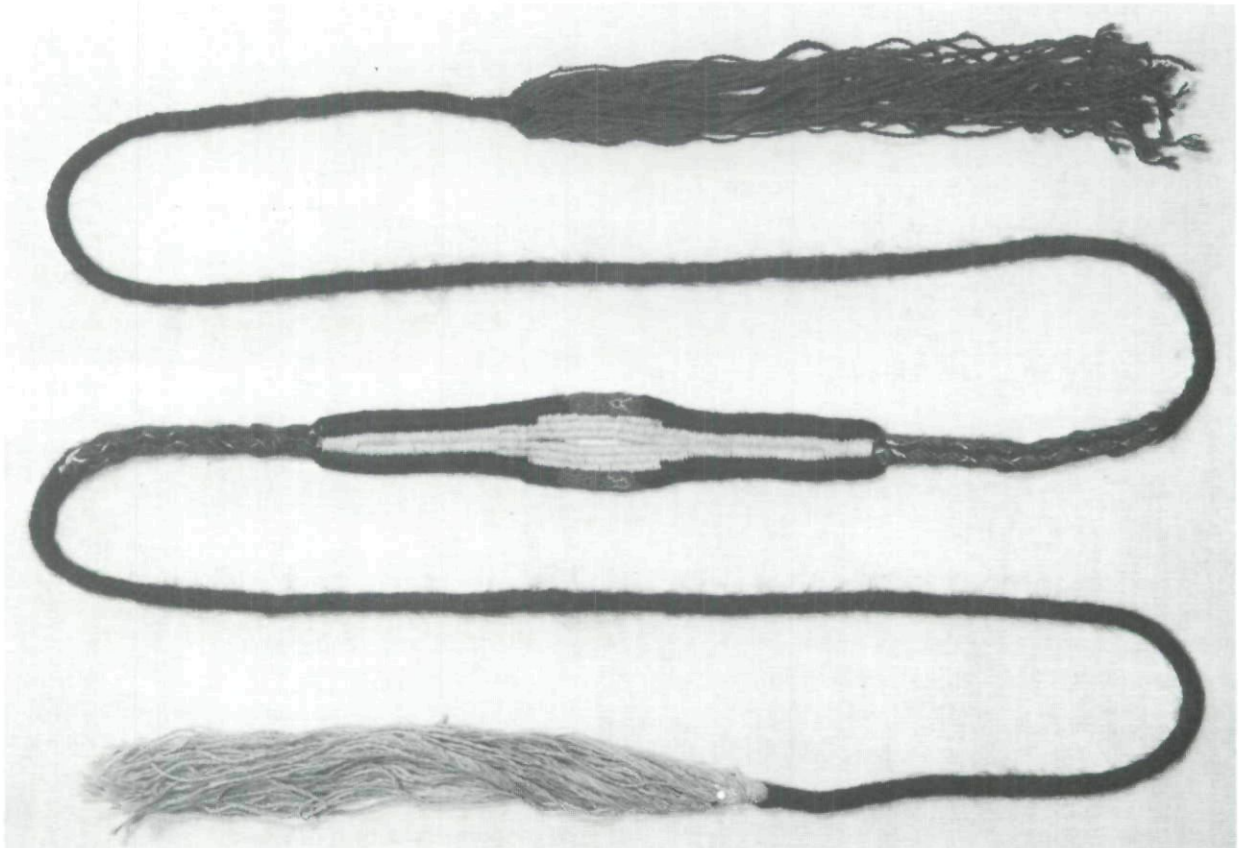

Fig. 1 Pre-Columbian sling from the south coast of Peru, Nasca drainage, with braid similar to the braid called *ch'ichilla* in the Macusani area, used for the sections adjacent to the cradle. TM 1966.7.202.

Many beautiful, complex braids have been found in slings from pre-Columbian Peru and Chile, of which the Textile Museum has a large number in its collection (Fig. 1). Until recently, Raoul d'Harcourt was the only one to have made a detailed analysis of these braids.[1] He suggests that the simplest ones might have been braided downwards, as shown in Fig. 2, but was unable to determine how the more complex ones might have been done.[2] His formidable diagrams of the latter, showing circles of dots with arrows indicating the crossings of individual yarns, give no immediate impression of either the actual structure of the braids or of any simple method of producing them.

Slings with braids of identical structure are, however, still made today by herders in the Andean highlands and it is likely that the methods they use are directly descended from pre-Columbian antecedents. Braiding is, however, done primarily in the highest altitudes and most re-

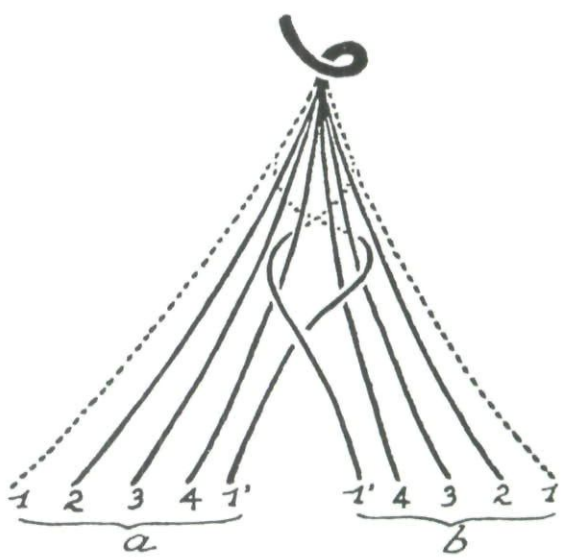

Fig. 2 Diagram showing downward braiding of eight strands. (From Harcourt[1], Fig. 55, by permission of University of Washington Press, Seattle.)

mote areas by herders tending their flocks, so that their techniques were unknown to textile professionals until very recently. During anthropological field work in the district of Macusani in the northwestern part of the Department of Puno in southern Peru from January to June 1978,[3] I was able to learn to make braids in four different patterns, from which the general method can be extrapolated. This method is described in detail, and many patterns are reconstructed, based on analysis of both pre-Columbian and modern slings from various parts of the Andean area, in a monograph written with Adele Cahlander and Ann P. Rowe.[4] The present paper presents the data on braiding specifically as it is done in the Macusani area.

Macusani is the provincial capital of Carabaya, known during the colonial period for its deposits of placer gold and herds of domesticated camelids, the llamas and alpacas. On the eastern slope of the Andes, at 4,450 meters (14,600 ft.) above sea level, the town of Macusani is located in the *puna*,[5] the highest habitable altitude zone. Mostly unsuited for agriculture, this cold grasslands region is ideal for raising alpacas with the finest long fiber. Today, in the *puna* region, family-owned herds of llamas, alpacas, and Spanish-introduced sheep still constitute the principal economic resource of the predominantly Quechua-speaking indigenous population.[6]

Andean herders practice transhumance, or seasonal movement between different pastures. Transhumance requires access to a minimum of two pastures at different altitudes, for the dry and rainy seasons. Herders maintain a central homestead around which most social life is focused and one or more temporary houses located in the family's other pastures. The daily herding is usually done by women and/or small children of both sexes. The seasonal change of pastures and the trading trips are usually done by men. This division of labor is flexible enough to allow the work to be done by any household member if circumstances prevent the normal arrangement.

To supplement their diet of animal products, herders travel with pack trains of llamas (Fig. 3) to lower, warmer altitude zones to exchange meat, wool, fat and hides, as well as ropes, slings and some textiles, for needed agricultural products. Trade may be direct or may involve intermediary trips to still other zones for products such as salt, fruit, or coca leaves.

Many herders also sell fiber from their alpacas and sheep to wool merchants. Landless herders who do not have access to pastureland, either their own or their family's, often work for estates, receiving, in return for labor, little or no

Fig. 3 Llamas loaded for a trading trip, their hand-woven sacks lashed on with 5- or 7-strand braids of oblique interlacing with only one interlacement before changing direction. Photograph by Deborah A. Caro.

salary, the "right" to pasture their animals, and perhaps rights to some newborn animals. Many Peruvian estates were converted into agrarian cooperatives (S.A.I.S.) after the Peruvian Revolution of 1968 but, for the most part, it appears that conditions for herders have changed little. Through the sale of fiber and wool, herders, seemingly the most isolated of all rural peasant groups, are intimately tied to the regional and national economy of Peru, and are affected by the international market.

Recent Andean and global economic developments continue to profoundly affect aspects of the herders' economy, with implications for herding, and thereby, also of braiding.

The sling has a long history of being used for herding and as a weapon in combat in many different parts of the world.[7] In the Near East, there is evidence of its use from the beginning of the Neolithic period (10,000 years ago), and perhaps earlier. In pre-Columbian times, Andeans used functional slings in herding and combat, but in addition, ornamental slings became important for ceremonial use. Many of the latter had elaborate patterns produced with a soumak-type wrapping, while others were braided.

According to the herders' classification, which is used in this article, the term "sling" (*waraq'a*) includes both herding slings (*michina waraq'a*, a "thing-for-herding sling"), and dance slings (*q'aqcha waraq'a*, "Carnaval sling") (Fig. 4). Yet, a tasseled dance braid, *wichi-wichi*, is not classified by them as a sling. A cradle is tapestry-woven (Fig. 4) into the center of herding slings, and the simpler braids in Fig. 6 are used at one end for both herding and dance slings. Typical slings are compared in Figures 7–12.

A variety of other braids are made in the area for 1) end-finishes for belts, 2) hair ties for women's braids, 3) horse hobbles, and 4) camelid fiber ropes, an important trade item.

Fig. 4 Macusani girl dressed for a portrait, holding a dance sling, Type *B*.

HERDING SLINGS

Today, in the Andean area, the sling is seldom employed as a weapon in combat, although it continues to be used in certain yearly battles between moieties within communities, or moeity-like divisions of two communities, in regions of Ecuador, Peru, and Bolivia.[8] Slings are more commonly used to control the direction of the animals during herding, or traveling with llama pack-caravans on trading trips. They may also be used to protect crops from marauding birds and small animals, or by children to kill birds.

To use the sling, any rock of a size proportional to the central cradle is selected and placed in the cradle. The slinger holds both ends of the sling in her or his right hand, one end grasped firmly and the other end lightly held for easy release. If the sling has a loop at one end, the fourth finger, or third and fourth, are put through the loop and the other end grasped between the thumb and first or thumb and first and second fingers, with the fold in the center of the cradle where the missile is placed. If the sling does not have a loop, the end that is held in the hand is made longer so that it can be wrapped (once) around the third and fourth fingers. The end to be released is held in the same manner as with slings having a loop. About half of the Macusani slings have loops and half do not. The slinging motion is almost completely vertical, like the turns of a wheel. After rotating the sling to gain momentum, one end is snapped open to hurl the missile. Generally (I have only seen one exception) the cradles in herding slings are woven with a lengthwise slit. This helps hold the rock, and thus seems to enable the slinger to use any irregularly shaped stone as a missile. When the sling is not being used the herder carries it loosely draped around her or his neck with the ends hanging down in front.

Herding slings (*michina waraq'a*) average nearly two meters in length (five to six feet). They are made of two braided sections, with a finger-woven weft-faced plain weave cradle (*tara*) between them, in which the missile rests (Fig. 5). The cradles of herding slings are sometimes edged with a single or double row of cross-knit loop stitch (*kompasqa* or *doble kompasqa*), or an overcasting stitch, often in bands of contrasting colors. Herding slings in the Macusani area are prepared with undyed camelid fiber, using the full range of natural colors, including white, yellows, tans, browns, greys and blacks. In the Macusani area, the loop is made by dividing the strands in half to make two braids side-by-side for a space, while in some other areas, such as Ilave, an Aymara community near Lake Titicaca, the loop begins the braid at the very end, requiring a different way of starting the sling-braiding in the middle of the long strands (Figs. 7–9). For the Macusani-type herding sling, warps are first wound for the central cradle section and section *c*, and they are used as a handle (*k'akchana*) for the braiding of section *a*, which is braided first. The braider then opens out the

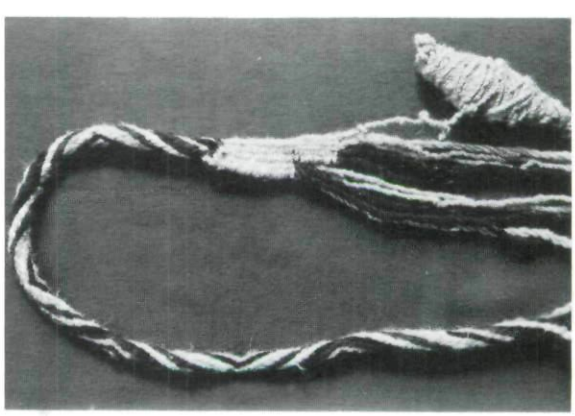

Fig. 5 Cradle partially finger-woven.

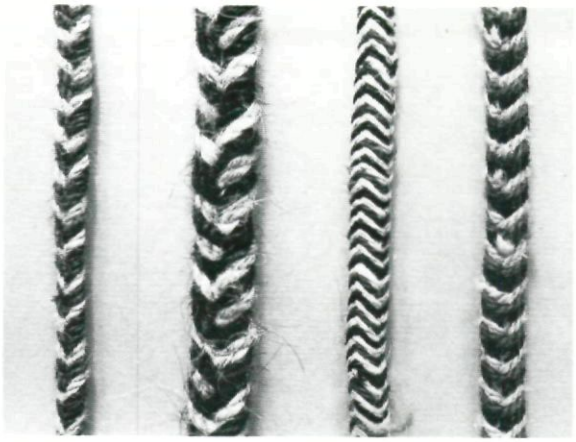

Fig. 6 Detail of braids often used in *a* part of slings. **a.** Two 5- and one 7-strand braids of oblique interlacing with one interlacement before change of direction. **b.** 4-sided 8- and 16-strand zig-zag patterned braids.

warps for the center, adding other elements as necessary, and finger-weaves the weft-faced cradle, *b*. The remaining lengths, with any other elements that may need to be added, are braided for the *c* section to complete the sling.

For the Ilave type with the initial end loop, there is one continuous length to which additional elements are added to create a more complex, multi-element braid on each side of the cradle. To begin the sling, a short braid is made in the middle of the long strands. It is folded to form the initial loop *a*, which brings the long strands together, so they may be braided for section *b*. At some point, additional elements are added for the more complex braid *c*; the elements are then used as warp for the central cradle *d*. Continuing in reverse order, the braider repeats the complex braid *e*, then reduces the elements in number, and braids the final section *f*. The elements may be reduced either by cutting and carrying the ends inside as a core, or by letting the ends protrude in a decorative manner.

In the Macusani area, certain braids are characteristically used for herding slings, others for dance slings. In the herding sling, the thinner braid *c* at one side of the cradle is usually a simple 5- or 7-strand braid of oblique interlacing, with only one interlacement before each yarn changes direction, or occasionally an 8- or 16-strand 4-sided zig-zag patterned braid, *q'uchu* (Fig. 6).

The thicker 4-sided braid *a*, on the other side of the cradle, in half of the 14 herding slings I saw, was *ch'ichilla*, a 3-color diamond design made with 28 strands (actually a 24-strand braid with four strands doubled for the diamond centers). In the remaining half of the specimens, the following were used: *llama ñawi*, a 3-color 24-strand 4-sided braid with concentric diamonds; *paki*, a 16-strand spiral braid; and one 16-strand diamond braid (Fig. 13). Some of the slings had large tassels (*pullaqcha*) attached to the *a* end, perhaps an indication of ritual use.

DANCE SLINGS

Macusani dance slings (*q'aqcha waraq'a*) are made in two types, both of which are used primarily in the *q'aqcha* or *wifala* dances of March or April that coincide with the Catholic pre-Lenten celebration known as Carnaval. These dances also take place in homesteads of individual families on the evening of the annual "branding" ceremony (*señalakuy*), in March-April or August.

The first kind of dance sling, *A*, which is also used as part of the dance costume for both men and women for several other regional dances, is worn in pairs over the shoulders, crossed over the chest, with their ends loosely knotted at each side. Sometimes, instead of being worn, this sling may be held at each end, in the hands. Those of type *B* are held by both men and women doubled in the hands and swung around in the dance. The thinner *b* section is used by the women to strike playfully at the feet and legs of their male dance partners. One such sling I collected had a thin wire in it. In the Macusani area, dance slings are usually braided of undyed alpaca fiber, although one sling that I saw used dyed yarn, apparently camelid. Sheep wool, dyed in a variety of colors, is preferred for the yarns used to embroider on and join tassels to the braided section.

Type *A* slings are generally made of two braided sections joined from a central point (Figs. 10, 11). A loop is frequently braided near one end, and a large tassel of spun yarn is usually sewn at the other end. The chief characteristics are the particular kind of braid used, and the special pompons, made of unspun fiber, often still attached to the hide. They are in natural or dyed colors, and are sewn in series along the length of most of the sling. These slings are sometimes embellished with yarn tassels, although the fiber pompons, especially those of alpaca, are considered more desirable.

Type *B* slings are also usually made of two braided lengths, joined at the center (Figs. 10, 12), but with different braid structures. There may be a loop braided in one of the side sections, or separately made and attached through the body of the sling. A large tassel sewn at

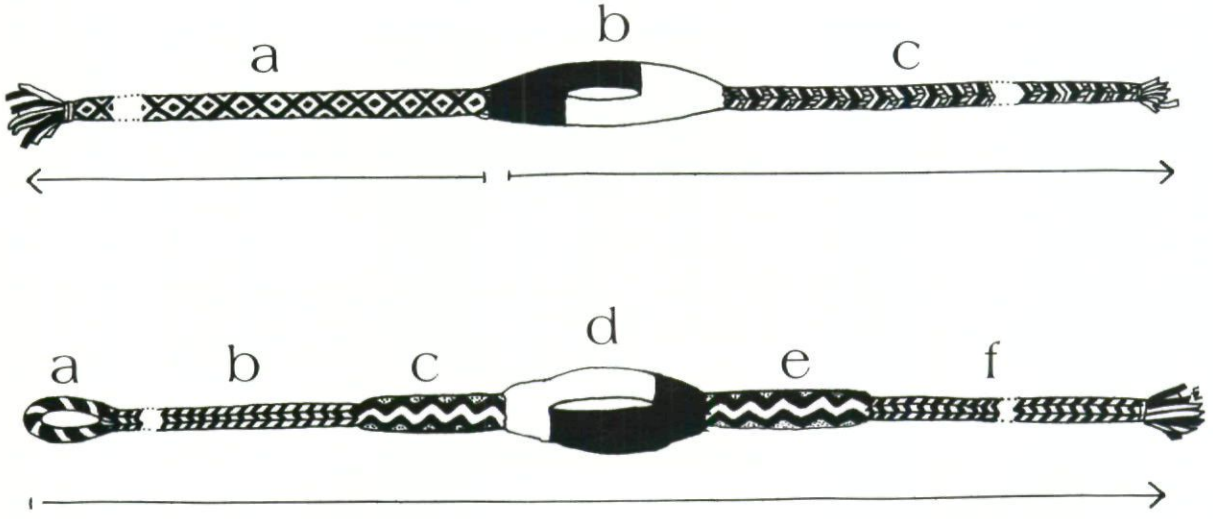

Fig. 7 Diagrams of typical herding slings. Above, Macusani type, with braiding begun next to the cradle. Below, Ilave type, with braiding begun at initial end-loop. The structure of *c* and *e* is usually identical. Arrows indicate the direction of braiding.

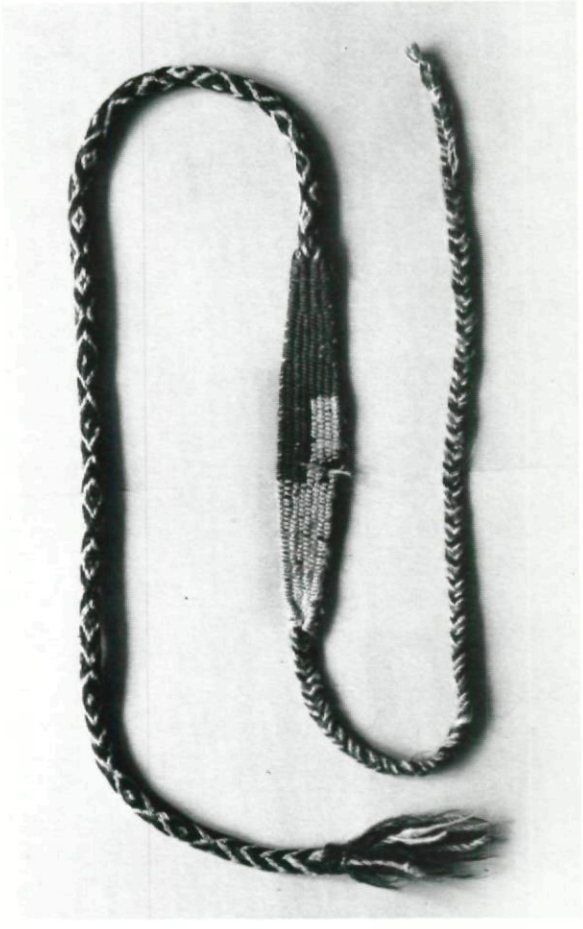

Fig. 8 Macusani-type herding sling, with cradle, and one end longer to wrap around the hand.

Fig. 9 Ilave-type herding sling, with cradle and intial end-loop. There is a larger braid on each side of the cradle, a thinner one at each end.

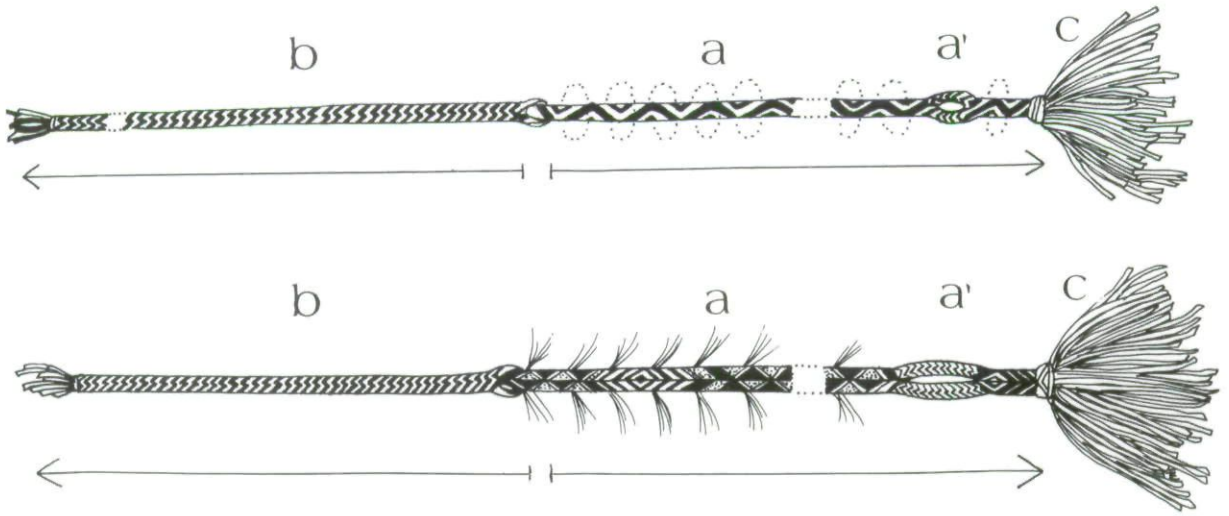

Fig. 10 Diagrams of dance slings. Above, Type *A* with pompons. Braiding begins at the join of the two braids; the more complex braid *a* is done first. Below, Type *B* with spaced fringes and large bottom tassel *d*. Braiding begins at the join; the *kantunqa* braid *a*, with core, is done first. Arrows indicate the direction of braiding.

Fig. 11 Type *A* dance sling, Macusani, usually worn on the shoulders, crossing the chest and tied at the sides, but also sometimes is held between the hands. Characteristically, it has fiber pompons, either with or without the hide.

Fig. 12 Type *B* dance sling, Macusani, usually doubled and held in the hands. It does not have a cradle, but always has a large bottom tassel. It may or may not have spaced fringes. In this case, purchased twill-braided wool tape was used for a fringe effect.

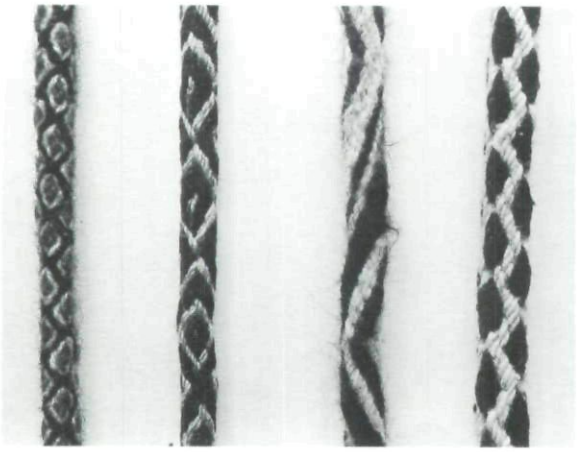

Fig. 13 Detail of four 3-dimensional sling braids. **a.** *ch'ichilla*, diamonds (24 + 4 str.) **b.** *llama ñawi*, concentric diamonds (24 str.) **c.** *paki*, spiral (16 str.) **d.** *ñawi*, diamond (16 str.)

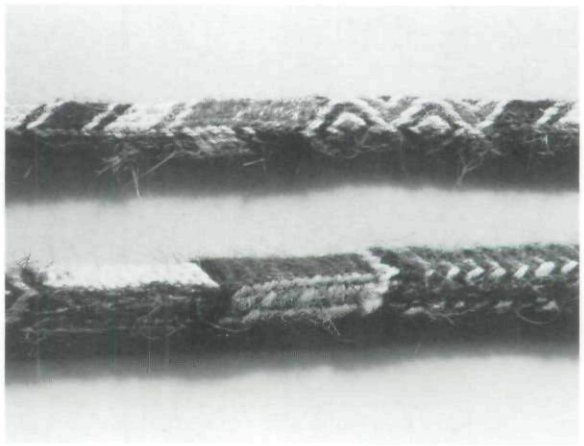

Fig. 14 Detail of two *kantunqa* braids, with inner core used in color substitution. This 3-dimensional braid is used in Type *B* dance slings.

one end is fuller and more elaborately embroidered at the join than for type *A*. A varying number of yarn tassels are attached by sewing to the body of the sling.

The typical type *A* dance sling has an 8- or 16-strand *paki* braid with spiral pattern in 2, 3 or 4 colors, for the *a* section, and, for the *b* section, an 8- or 16-strand 4-sided zig-zag patterned braid. The typical type *B* dance sling is made with a 16-strand 4-sided zig-zag patterned braid in the *b* section, and in the *a* section, a four-color 48-strand *kantunqa* braid, having 24 working strands and a core of 24 strands for color substitution (Fig. 14). The multicolor pattern is a varied series of diamonds and parallelograms, in a braid whose cross-section is obviously square.

THE SLING MAKERS

Slings are produced almost exclusively by men in herding families. Not all herders in the Macusani area know how to braid slings, although most are acquainted with doing the simpler braids. Both men and women articulated the belief that women couldn't learn how to braid slings, although I met one female herder who knew how quite expertly. Sexual division of labor is the norm in contemporary Andean textile production.

Most of the men whom I met in Macusani who knew how to braid slings had come to the town from the nearby herding area of Nuñoa in the province of Melgar, Department of Puno, or from communities and landholdings immediately surrounding Macusani.

Herding slings are made for family use, or in some areas, along with braided ropes, as trade items. Slings are rarely sold. The majority of the herding slings that I purchased were from families that were no longer herding. Herd size may be reduced beyond an economically viable size due to death of the animals or loss through rustling.

The same men who make herding slings also produce dance slings for family use. A few urban Macusani artisans, usually treadle loom yardage weavers (*bayeteros*), many of whom had been former herders who had migrated to the town of Macusani, also make dance slings that they rent out as part of a "complete dance costume" to local dance groups or high schools. Increasingly, regional dances are performed in "non-traditional" contexts such as these.

Andean sling braiding is very portable, requiring no paraphernalia, apparatus, or tools beyond the spun yarns that are being braided. Most commonly, slings are made during the daytime on trading trips during the daily late afternoon grazing period, or at other times when men check their herds, although this time is also used for spinning or plying for slings or ropes or other textiles. Some "free" moments in the evenings are also used, where small wick-lighted lamps are needed in the herders' homes or temporary huts. Some braiding may also be done on the extremely rare "free" rainy days, when the herders are not busy with other, more urgent tasks.

In estimating production time, producers are quite consistent for the particular braids used in the sling, but not for the entire sling. Excluding the spinning, one-half day's time was estimated for the *b* section with either the 16-strand *paki* (spiral) or the 24-strand *llama ñawi* (concentric diamonds). One and a half to two days was estimated for the 28-strand

(24+4) *ch'ichilla* (diamonds) and three days for *kantunqa*, the 48-strand (24+24) braid with a core. These braided sections measure about 60–75 cm. (24–30 inches).

BRAIDING INSTRUCTION

When I asked about how they had learned to make slings, men replied that they "just knew" since they were boys. When I entreated further, they might answer that they had learned from watching their father, an older brother or another man braid (Fig. 15). While someone was showing me how to braid, and he got into a conversation with a visiting young man, another method was mentioned: Sometimes young boys learned by taking apart a sling, redoing it, taking it apart again, until it could be done successfully. This might involve the risk of being unable to re-braid, and possible trouble with the boy's father.

During my first month of residence in Macusani, I purchased three slings from a man in the weekly market who had asked me if I was interested in buying a blanket that his wife had woven. He lived in a peasant community outside of Macusani. Talking with him first in Spanish, then in Quechua, I told him that I was interested in learning how to braid slings. After several weeks of visits and conversation following that first sale, he finally agreed to teach me, though he doubted whether it was worth his time, since he assumed that I would not be capable of learning. I was unaware of how rare it was for a woman to braid, and, as a North American, I was at a double disadvantage, since it is common knowledge that North Americans can't do anything with their hands.

After watching my teacher prepare the yarns for braiding, and braid for about an hour without any conversation, I was told to begin. After I worked for some time, he patiently took out what I had done incorrectly, and continued. I took the braid again, and once more he undid my work. At that point we were both tired, and broke for lunch, my teacher telling me to come back the next day "when I could braid." I returned three days later, having spent one and a half days learning, by taking out much of what had been done. Although the generally-accepted method is to begin with the 16-strand *paki* braid (spiral), which is the least complex 4-sided braid, I was first taught the 24 strand *llama ñawi* braid (concentric diamonds), which is one of the most complex.

From a second teacher, I learned the 16-strand *paki*, and the 28-strand *ch'ichilla* braid (diamonds, 24+4 strands). He had been living in Macusani for over 15 years, but was originally from Nuñoa, Puno. While I was sitting braiding in the Macusani plaza, waiting for a bus, I met a woman herder who taught me a variation of the 16-strand *paki*. I did not learn where she was from. The 4-color 48-strand *kantunqa* braid (24+24 strands) was learned from yet another teacher, who lived just outside the city limits of Macusani.

Fig. 15 Boys learn to braid partly by watching the men braid.

SPINNING FOR SLING MAKING

Sling production begins with the preparation of the yarns that will be used. In some areas, braiders almost without exception use the finer, thinner yarns spun on the drop spindle; some Macusani-area producers prefer them for most slings. The braids with more colors and extra strands in the core for substitution, the favored structure for the *B*-type dance sling, are almost invariably prepared with drop-spun yarns because it is necessary to reduce bulk. Most ropes are made of llama fiber, which is coarser, stronger and longer-lasting than alpaca fiber. Sometimes the fiber used is from the chest of llamas or alpacas which has been allowed to grow for years to reach almost ground length. Leaving an uncut area of fiber may also serve as one means of herd identification. Herding slings may be made of either llama or alpaca fiber. Dance slings are usually prepared from alpaca fiber. Llama-alpaca crosses also occur and the fiber may be used for slings.

In the high Andes, a special type of spinning is done, by men only, to prepare the thicker yarns that are used for ropes and most herding slings.[9] Stick-spinning, or *mismiy*, is usually done with a smooth stick about the thickness of a pencil, that has a small notch about an

inch in from the edge, although any stick or even a pencil will do. *Mismiy* may be translated as "spinning with a stick for coarse thread for braiding ropes or slings." The stick is called *mismina*, a "thing-for-*mismiy*."

Stick spinning is done by first drawing out fibers from the uncarded mass of alpaca or llama fiber that will be used. The drawn fibers are loosely pulled into a long length, and spinning is started by wrapping some fibers onto the notch. The stick is held loosely in the right hand, while the left hand holds onto the length of fibers (Fig. 16). The right wrist is rotated, either clockwise or counter-clockwise, while the stick is allowed to rotate loosely in the hand. The degree of twist is actually controlled by the left hand which regulates the passage of the unspun length of fiber. *Mismiy* is extremely rapid. A pound of alpaca can be stick-spun in a day by an attentive herder.

PREPARING FOR BRAIDING

Before braiding, the yarns must be made ready. Each teacher, from a different area, used a slightly distinct method. I did not determine whether these represented individual preferences or local variations.

My first teacher used his own yarns for my short sample. To prepare eight strands for each of the three colors of the 24-strand braid, he cut two long lengths of each color, that he doubled, and cut at both ends, then folded in half again to find the center, where he attached the "handle." For this, he took some spun horsehair out of his jacket pocket, doubled it repeatedly, then folded it over the center of the braid yarns, and firmly wrapped them together (Fig. 17).

Fig. 16 Herders do much of the yarn spinning for herding slings and ropes by the method of stick spinning, *mismiy*.

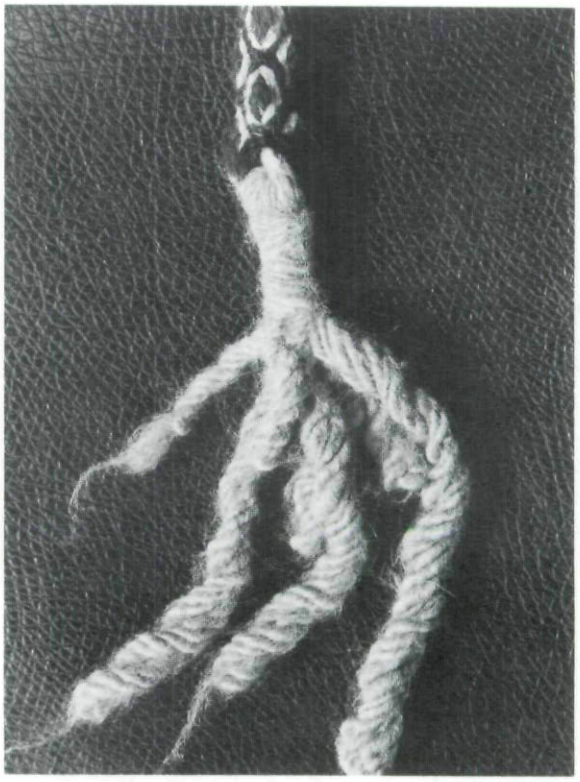

Fig. 17 A wrapped "handle" of yarns secures the strands for beginning braiding. This is later opened up for use as a warp in the weft-faced plain weave cradle of the Macusani herding sling. In dance slings, the handle yarns are used for the *b* section.

My second teacher prepared a "standard" braid length with yarns that I had stick-spun. He looped the yarns around a spike stuck in the ground, to ply them (Fig. 18) After plying, he laid out the three colors for the *ch'ichilla*, eight elements for each of two colors, and twelve elements for the third. The handle was made

Fig. 18 The single-spun yarn is stretched around a stake to ply it. Here the initial end is held with the braider's teeth while he breaks off the yarn. With the two ends between his palms, he gives them a reverse twist.

from a very long length of replied yarn.

Using yarns that I had stick-spun and plied or replied, depending on their thickness, my third teacher prepared twelve elements for each of the four colors for the *kantunqa*. He used a wooden stake to lay out the yarns, which he then cut and folded, before making the handle.

GENERAL PROCEDURE IN BRAIDING

The following description is based on my observation of braiding done in the Macusani area. The 16-strand *paki* braid with the spiral pattern is considered easiest. Although I was taught the four-color *paki*, which they prefer, the following example is for the two-color version, with eight light strands and eight dark strands.

To prepare the yarns for braiding, eight lengths of yarn, 4 light and 4 dark, are laid side by side, and the handle folded over their centers. The handle is secured by wrapping with a long piece of yarn. Then it is grasped in the left hand with the strands going upward, so that braiding can proceed from the bottom upward. To form the 4-sided (square) braid, the light and dark strands in turn will cross the braid horizontally at right angles to each other (Fig. 19).

The strands are separated above the left hand, dividing the lights between the front (*A*) and the back (*A'*), and the darks between right (*B*) and left (*B'*). The dark strands are then smoothed down on opposite sides beside the handle and held firmly together. The light *A-A'* elements are ready for being alternately crossed as shown in the working diagram (Fig. 20), starting at the left of the *A* rectangle.

For the first sequence of each color, the yarns are simply selected in turn, but after that, an important differentiation is made between *lowers* and *uppers*. Since only half of the yarns from each side make the crossing each time, they may be observed to be on two levels, as shown in the vertical cross-section view, Figure 19. The *A* yarn that made its crossing previously under a lower row of *B* crossings is a *lower*, while the *A* yarn that crossed later, below the upper row of *B* crossings, is an *upper*. (See also Fig. 21.)

This concept of *upper* and *lower* is crucial. It is the lower yarns that are visible on the outside of the braid, and that must be kept in particular order. In each crossing pair, the lower yarn is crossed over to the side of its corresponding upper partner, and both are slightly twisted together and anchored under

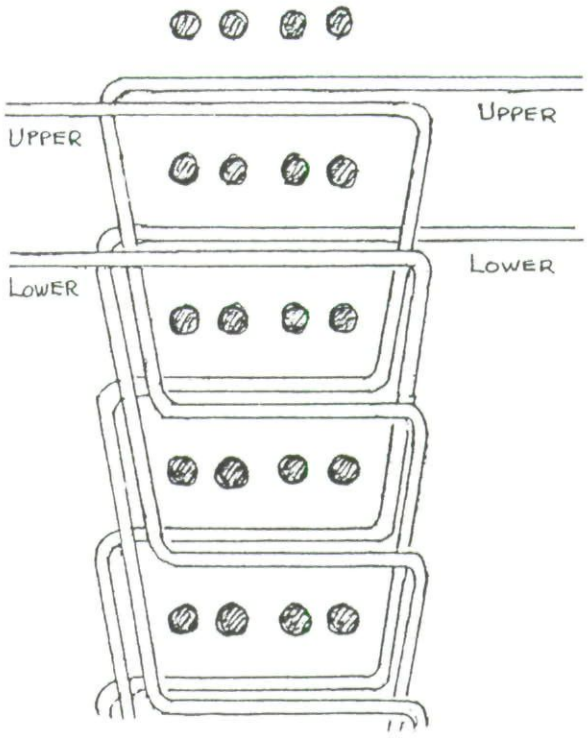

Fig. 19 Diagram of vertical cross-section of the 16-strand 2-color *paki* braid with spiral pattern. The dark circles represent the rows of *B* crossings; a "group-of-four" light *A* strands is shown crossing and trending upward. Observe the distinction at the top between *lowers* and *uppers*. (A similar diagram could be drawn for the other plane, with light circles and dark lines, for this 3-dimensional structure.) Drawing by Dale Wurdeman, designed by Adele Cahlander.

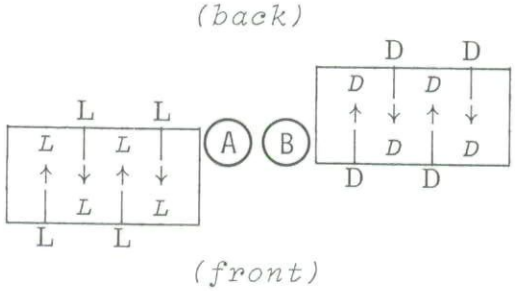

Fig. 20 Working Diagram for 2-color 16-strand *paki* braid with spiral pattern in Z-direction. Left, crossings of light yarns of *A* group; right, crossings of dark yarns of *B* group, to be done later, *above* the *A* crossings, and at right angles to them. *Lowers* are shown outside of the rectangles, *uppers*, inside. The crossings start at the *left*, in each rectangle.

a finger, to hold them. The direction of this twist is temporary and need not be of concern.

The crossings will be done alternately toward the back and front, but always starting at the left of the front and back sides. To form a spiral pattern in Z-direction, the first left crossing is UP (↑) toward the back. The step-by-step sequence is illustrated in Figures 23-25, 26-28, and 29-31. The sequences are re-

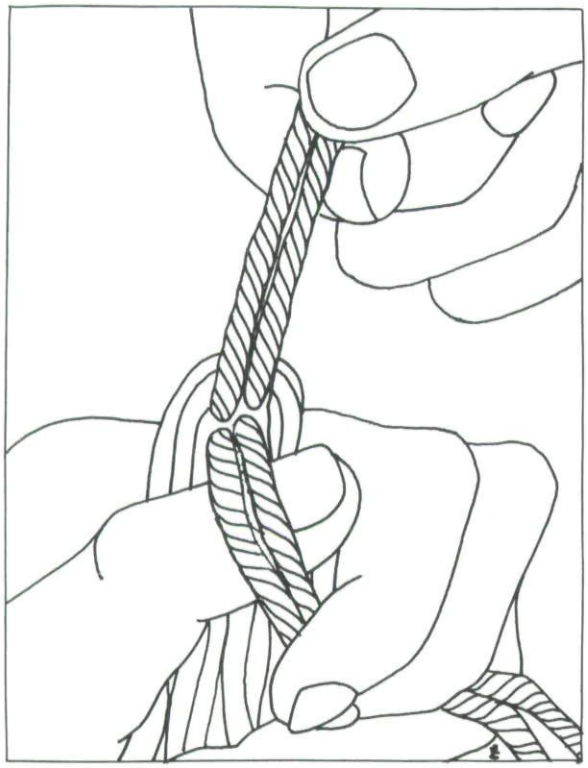

Fig. 21 It is important to differentiate between the *lowers* and *uppers* in the sequence of braiding.

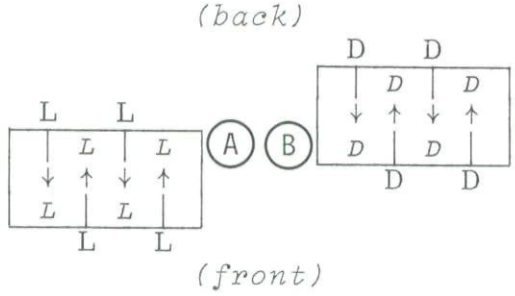

Fig. 22 Working Diagram for 2-color 16-strand *paki* braid with spiral pattern in *S*-direction. The first crossings at the left are DOWN to the Front, instead of UP to the Back, which was done in Fig. 20.

peated alternately, with the light *A* yarns and the dark *B* yarns.

Macusani braiders tighten the elements in one of two ways: either in groups when shifting to opposite sides, or as pairs of yarns, after selecting out the elements of each crossing pair, before twisting them.

For a spiral pattern in an S-direction, the direction of the crossings is changed. The first crossing at the left is made DOWN (↓) to the front, for both the *A* and the *B* groups (Fig. 22), instead of UP (↑) to the back. The following crossings are alternated in direction as before.

In summary, the concepts that I observed and was taught were:

1) The braid is held in the left hand; the right hand moves the elements and the braiding proceeds from the bottom upward.

2) The elements are divided equally to form four sides.

3) Two opposite sides are held down in the

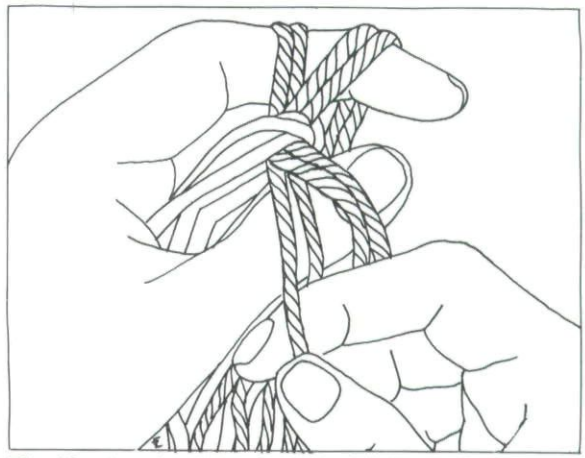

Fig. 23 *Crossing UP to the Back* (↑). From the left edge, the front *lower* yarn is selected.

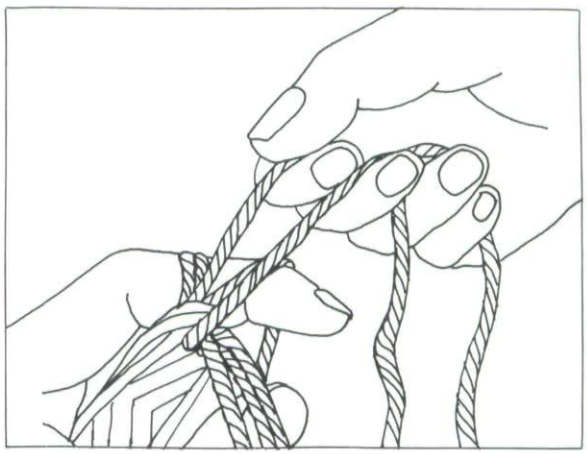

Fig. 24 To it is added the back left *upper* yarn. The pair is smoothed out toward the right, and the right index finger is inserted *upward* between them.

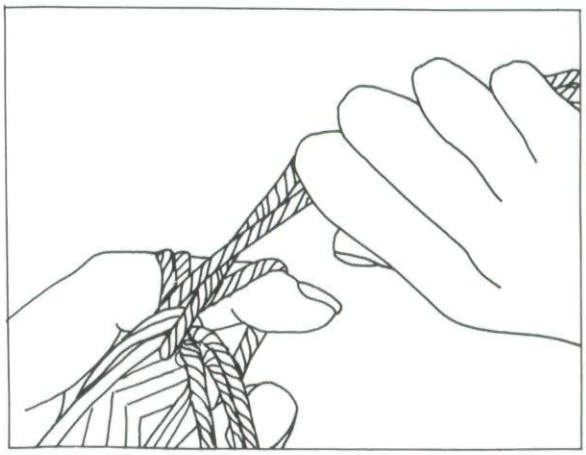

Fig. 25 The right hand is rotated counter-clockwise, bringing the pair of yarns to the back of the left hand and down, securing the pair under the left little finger. (Some use the middle finger.)

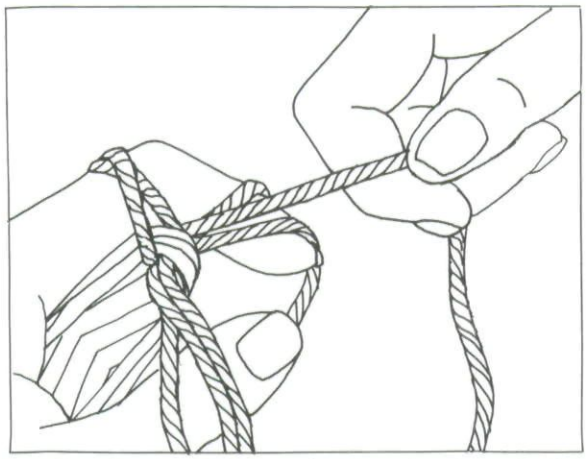

Fig. 26 *Crossing DOWN to the Front (↓).* From the left edge, the back *lower* is selected.

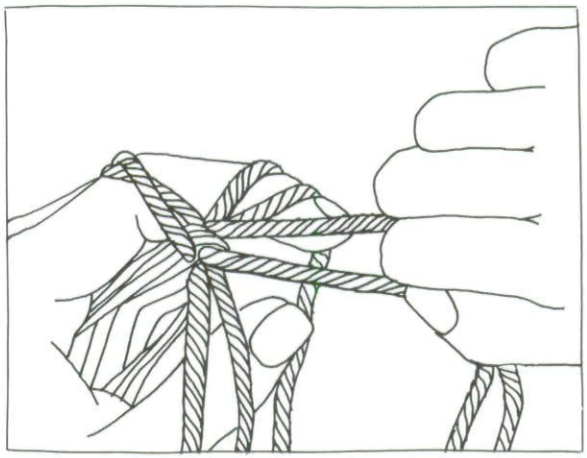

Fig. 27 To it is added the front left *upper* yarn. The pair is smoothed out toward the right, and the right index finger is inserted *downward* between them.

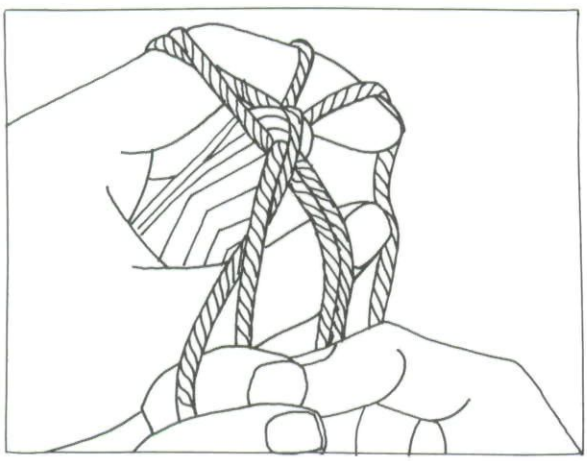

Fig. 28 The right hand is rotated clockwise, bringing the pair of yarns to the left of the thumb and down, and they are anchored under a finger. The other yarns are crossed in like manner, up and down, as indicated in the *A* rectangle, Fig. 20.

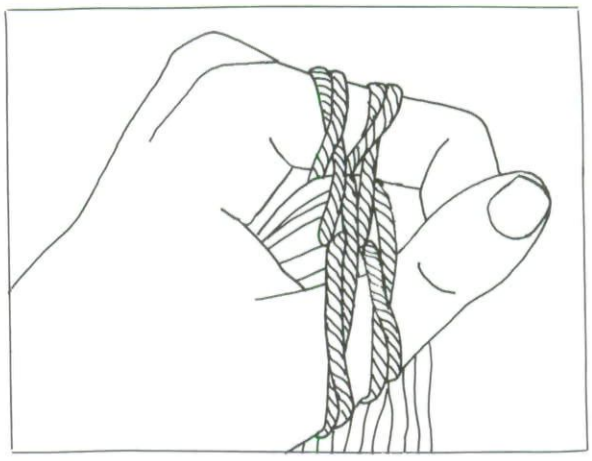

Fig. 29 *Shifting to the B Group.* The crossed *A* pairs are readjusted on the left fingers, closer to their tips, and the yarns are anchored firmly below with the left middle finger.

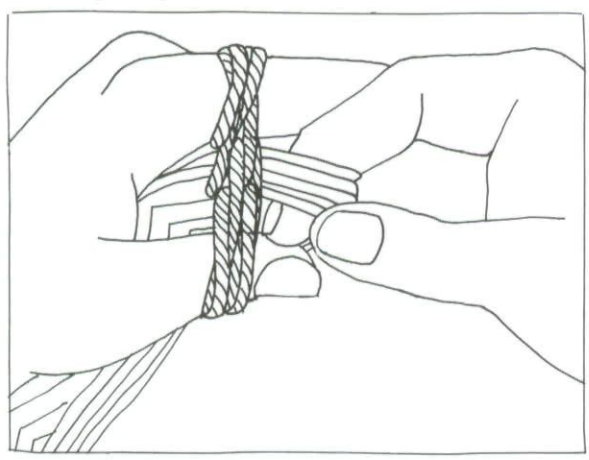

Fig. 30 The fingers of the right hand lift up the *B* and *B'* groups, grasping them firmly, while the *A* yarns are held taut to help control tension.

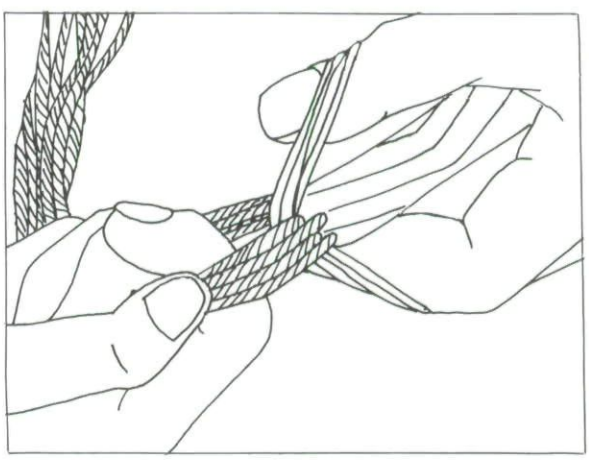

Fig. 31 The *A* groups are released from the left fingers, are pulled taut and smoothed down parallel to the handle, while the braid is grasped in the left hand with a 90° rotation, so that the *B* yarns are on the front and back sides. (Because this braid is rotationally symmetric, the direction of rotation does not matter.) NOTE: The sequence of *B* crossings may now be done, as shown in the *B* rectangle, Fig. 20. These sequences are repeated alternately, *A*s and *B*s.

hand; braiding is done with the other two sides. These sides are later exchanged.
4) Elements from opposite sides are crossed in pairs.
5) Elements appear as *upper* and *lower* in relation to one another; *lower* elements are crossed to the side of the upper elements.
6) The crossings always alternate toward the front and toward the back; the first crossing begins at the left.
7) To hold them, the pair of elements is twisted together temporarily and anchored under a finger.

Only point five was verbally stressed during the lesson.

The structure of these braids is thus 4-sided rather than round as shown in Harcourt's diagrams or as many finished braids actually appear. Different designs are formed by structural variation produced, for example, by changing the direction of first crossing between the *A* and *B* groups, or between successive rows, or by exchanging elements, as well as by color use.

FINAL STATEMENTS

While we cannot be certain that the method of braiding currently used by Macusani herders is identical to that of the ancient Peruvian slingmakers, the lack of implements, and the ease with which we have been able to reproduce ancient sling braids with this method, makes correspondence probable. Of particular interest is the occurrence of two types of herding slings, one begun at the center as in Macusani and one begun at the end, as in Ilave. Braid structures, designs in braiding, and types of slings have different variations in other areas, which have not as yet been recorded. Further research in the field is needed.

The future of braiding, like that of most contemporary Andean textile production, is difficult to predict. Ropes and probably slings will continue to be used as long as animals are herded and seasonal trading trips are made. Because of the economic importance of the wool market to the regional and national economy of Peru, it is probably safe to say that in one form or another, herding by peasants will continue. Simply speaking, there is no one else to raise herds amidst the harsh conditions of the *puna*.

The poverty and difficult life of the herders is compensated and enriched, however, by the strength of the social relations and cultural activities that provide numerous channels for adaptation to change. But the search by herders for a better way of life and increased dignity, which often means leaving herding for migration to the cities to seek wage labor, signifies increasing abandonment of such cultural activities as sling braiding. It is likely that Andean textile production, including the braiding of slings and ropes, will decrease in quality and intensity, but will still continue.

GLOSSARY* (A) Aymara (Q) Quechua (Sp) Spanish

BAYETEROS (Sp) Weavers of *bayeta*, a rough homespun cloth, used for Spanish-style tailored garments; usually produced by semi-professional or professional artisans, on treadle looms.

CH'ICHILLA (Q) 24-strand braid with 4 strands doubled (total of 28 strands). From *ch'ichi*, little spots or little grains.

K'AKCHANA (Q) "Handle" to begin braiding; section of the sling braided second. From *k'akchan*, a half of something (whole) divided in half; and *k'akcha*, to open the extremities (of something).

KANTUNQA (Q) 48-strand (24 + 24) braid with core. From *kantu*, edge.

KOMPASQA (Q) (or *DOBLE KOMPASQA*) Cross-knit loop stitch.

LLAMA ÑAWI (Q) 24-strand braid with concentric diamonds. From *llama* and *ñawi*, eye; *llama ñawi* is a common name for diamond designs.

MICHINA WARAQ'A (Q) (or *UYWA MICHINA WARAQ'A*). Herding sling. From *michina*, a thing-for-herding and *waraq'a*, sling. Also *uywa*, herd animal (with a diminutive or affectionate connotation).

MISMINA (Q) Spindle for stick-spinning. From *mismiy*, to stick-spin.

PAKI (Q) 16-strand braid with spiral pattern. From *paqi*, defined in one colonial Aymara dictionary as to break, twist, wrap around, some in one direction, some in the other; also *paqi korawa*, black and white sling (*korawa* is the Aymara term for sling.)

PARCIALIDADES (Sp) Unincorporated (peasant) landholdings, roughly corresponding to the Quechua term *ayllu*.

PULLAQCHA (Q) Sling tassel. Probably from *puqllay*, to play, especially during Carnaval.

PUNA (Q) Frigid altitude zone, usually above 4,000 meters (13,200 feet).

Q'AQCHA WARAQ'A (Q) Dance sling. From *q'aqcha*, a type of Carnaval dance and *waraq'a*, sling. Possibly also *k'akcha*, thunder.

Q'UCHU (Q) Minor end of sling, braided after the more complex braid is completed, usually 5- or 7-strand braids of oblique interlacing with only one interlacement before changing direction; also 8- or 16-strand 4-sided zig-zag patterned braids. From *k'uchu*, angle, corner.

SEÑALAKUY (Q) Annual fertility and marking ceremony for the herds, usually in March or April for sheep and August for camelids. From *señal* (Sp), to mark.

TARA (Q) "Cradle" of a herding sling.

WARAQ'A (Q) Sling.

WICHI-WICHI (Q) Braided dance tassel.

WIFALA (Q, A) Pre-Lenten dance. From *wifala* (A), flag.

*Apart from *waraq'a* none of the Quechua sling or braid terms are found in any printed Quechua dictionary. However, the probable dictionary origin of each term is given.

ACKNOWLEDGMENTS

My principal indebtedness is to the herders and their families in Macusani. I am extremely grateful to Nancy Bronstein, and the staffs of the Anthropology and Exhibits departments of the California Academy of Sciences, for all of their assistance. This article has benefitted extensively from the active and persistent collaboration of Adele Cahlander, who first drew my attention to braids, and whose editorial advice is greatly appreciated. Various private individuals and institutions allowed me or Mrs. Cahlander to examine slings in their collections; my thanks to all of them. Other individuals who helped in various ways are: Ms. Joan Bachrach, Dr. Junius B. Bird, Mr. Lawrence Dawson, Ms. Leslie Flint, Dr. Catherine J. Julien, Ms. Nobuko Kajitani, Mr. Loren McIntyre, Dr. Frank Norick, Ms. Chela Ormachea, Ms. Ann P. Rowe, Ms. Linda J. Seligmann, Ms. Louise Sperling, Dr. Dorothy Washburn.

NOTES

1. "Le tressage des frondes au Pérou et en Bolivie et les textiles chez les Uro-Čipaya, *Journal de la Société des Américanistes*, n.s. 32 (1940), pp. 103–130, and "Tressages de frondes à Nazca," *Journal de la Société des Américanistes*, n.s. 38 (1949), pp. 91–99. Both articles incorporated into Raoul d'Harcourt, *Textiles of Ancient Peru and Their Techniques*, edited by Grace G. Denny and Carolyn M. Osborne, Seattle, 1962.

2. Today, Harcourt's method of braiding downward, or a variant, is used in some areas to produce 8-strand braids. However, most 8-strand braids and virtually all of the 4-strand braids that I observed were braided upward. 8-strand braids produced by the downward method are not structurally identical to those produced in the same manner as the larger braids (i.e., upward, see below).

3. Field work was undertaken while making a permanent diorama display and research collection for the Department of Anthropology of the California Academy of Sciences, San Francisco, California and the Museo Dreyer, Puno, Peru. Forty-five slings were collected, the total available for sale. Of these, 14 were herding slings.

4. "Sling Braiding of the Andes," *Weaver's Journal Monograph IV*, Boulder, Colorado, 1980.

5. Most italicized terms, as noted in the glossary, are in Quechua, the Peruvian Spanish spelling of the Inca language which is spoken by the majority of peasants in this area. A few terms are in Aymara, which is spoken in a part of southern Peru and Bolivia; two terms are in Spanish.

6. There is a growing body of literature on Andean herding. One of the earliest studies on herders focuses on the Macusani area: Angelica Aranguren Paz, *Pastores de Altura: Economía y Ritos*. (Ph.D. Dissertation in Anthropology and Archaeology, Universidad Nacional Mayor de San Marcos, Lima, Peru, 1972). For an excellent series of essays and bibliography, see: Jorge A. Flores Ochoa, *Pastores de Puna: Uywamichiq Punarunakuna* (Lima: IEP Ediciones, 1977) and *Pastoralists of the Andes: The Alpaca Herders of Paratía*, translated by Ralph Bolton (Philadelphia: ISHI, 1979).

7. Manfred Korfman, "The Sling as Weapon," *Scientific American* (October 1973) 229:4, pp. 34–42. Also by Korfman, *Schleuder und Bogen in Südwestasien*, Bonn, Germany, 1972.

8. See for example M.A. Gilt Contreras, "Las Guerrillas Indígenas de Chiyaraqe y Tocto," *Archivos Peruanos de Folklore*, 1, pp. 110–119 (Cuzco, Peru); Diane Hopkins, "Play of Enemies: The Interpretation of a 1722 Ritual Battle in Southern Peru from Historical and Symbolic Perspectives," Paper presented at the XLIII International Congress of Americanists, Vancouver, Canada 1979; and Loren McIntyre, "The Lost Empire of the Incas," *National Geographic*, 144:6, pp. 729–787.

9. Grace Goodell, "A Study of Andean Spinning in the Cuzco Region," *Textile Museum Journal* 2:3, p. 6; and Horst Nachtigall, *Indianische Fischer, Feldbauer und Viehzüchter*, Berlin, 1966, pp. 235–6, Fig. 230. See also pp. 107–8, 243–5, Figs. 226, 228, 231–4, for further information on sling processes.

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